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AUTHOR Discoll, Amy; And Others
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ABSTRACT

This study investigated the impact of effective instruction research findings on the way student teachers think and talk about their teaching and the kinds of instructional strategies they demonstrate. The focus was on the influence of the cooperating teacher, the university supervisor, and weekly seminars. Twelve student teachers were divided into three groups. Group A students were placed with cooperating teachers who had studied research on effective instruction, attended weekly seminars on effective instruction research, and were guided by professors with an orientation toward effectiveness concepts. Group B students received similar treatment with somewhat different emphasis in seminars and supervisor orientation. Group C students acted as a control with neither cooperating teachers or seminars influenced by effective instruction research. Data was collected on information to verify treatment differences; student teacher instructional behaviors; and interviews on student teacher instructional thinking. Each are described in terms of collection and analysis procedures. Patterns found within the categories of demonstrated teaching behaviors were examined with respect to patterns in the way student teachers talked about their teaching. There was evidence in all three groups of the inclusion of effectiveness concepts in their vocabularies. It is suggested that effectiveness concepts are being disseminated through the schools in ways other than formal coursework and that effective teachers have been demonstrating the related behaviors without ever hearing about the research. (JD)

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# The Influence of Research on Effective Instruction on Student Teachers' Thoughts and Behaviors

Amy Driscoll
Portland State University

Don Kauchak
University of Utah

Dannelle Stevens
Michigan State University

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Warren (1985) has described the current focus on teacher education reform as "predictable and temporary." The predictability is derived from a pattern of educational reform which regularly shifts from classroom and schools to programs of preparation and which has been characterized by temporary interest and change. The effective instruction research has the potential for providing, if not a body of prescriptive findings, at least a set of terms that can form the basis for dialogue within teacher education programs. At the same time there is a commitment and concentration of efforts focused on an understanding of the workings and interactions of various components of teacher education. The profession's self-examination has the potential for a sound agenda of future research and development (Lanier, 1985). This study proposes to contribute to that agenda. The researchers examined major influences on the teaching thoughts and behaviors of preservice teachers. They specifically investigated the impact of effective instruction research findings on the way student teachers think and talk about their teaching and the kinds of instructional strategies they demonstrate.

## Perspectives

When experienced teachers were presented with the current research on effective instruction through inservice programs, they described the influence of the research information as promoting increased awareness of their teaching and a new way to think about their instructional behaviors (Driscoll & Stevens, 1985). Their teaching also evidenced the impact of the research literature with significant changes in specific teaching strategies, time allocation and patterns of instruction (Stevens & Driscoll, 1986). With current impetus and support for disseminating effective instruction research to teacher education, it is important to examine the influence of this research information on preservice teachers. Previous endeavors to influence preservice teacher education with

effective instruction research identified the clinical phase of preparation as an appropriate time to introduce the research material (Driscoll, 1985; Driscoll, Johns & Ponzio, 1984).

The literature on student teaching is mixed with respect to critical influences, however, three major variables are credited with significant impact. Zeichner (1980), Johnson (1969), Seperson and Joyce (1973) and Yee (1969) agreed that the primary influence on student teachers' instructional style is the cooperating teacher. Koehler (1985) and Zimpher, de Voss and Nott (1980) studied the role of university supervisor and found significant influences on the student teacher. In spite of the student teaching seminar's apparent popularity and acceptance, only two studies (Goodman, 1983; Tabachnick, Popkewitz, & Zeichner, 1980) looked at the effectiveness of seminars presented during the student teaching experience. As teacher education programs prepare to integrate more research knowledge, important influences on the clinical phase of teacher preparation, that is the cooperating teacher, the university supervisor and the seminar, may be the most effective dissemination variables. Weil (1985) has recommended that student teaching be a carefully guided training experience whereby research has a meaningful impact on the professional lives and habits of preservice teachers. This study followed Weil's advice and analyzed the impact.

This study of preservice interventions on the teaching thoughts and behaviors of student teachers draws upon two major bodies of literature for its foundation: research on effective instruction, and studies of teacher thinking. The current research on effective instruction is a "coherent body of knowledge linking teacher behavior to student achievement and attitudes" (Brophy, 1979). This foundational collection includes findings on Academic Learning Time (Fisher, Berliner, Filby, Marliave, Cahen, & Dishaw, 1980), classroom management (Kounin, 1977; Brophy & Evertson, 1976); active teaching (Rosenshine, 1983; Good & Grouws, 1979; Good, Grouws & Ebmeier, 1983), praise (Brophy, 1980, 1981), questioning

strategies (Gall, 1984) and other related studies of instruction. It serves as the body of influencing information for this study's intervention.

The second major body of research is the work on teacher thinking. It has been concluded that teachers' beliefs about teaching affect their instructional decisions (Borko, Cone, Russo & Shavelson, 1979; McNair, 1979) and that decision making may be the most basic teaching skill (Shavelson, 1976). The findings of Clark and Yinger (1979) provide a foundation for studying the thoughts of student teachers about their teaching. Current literature on teacher thinking (Clark & Peterson, 1985) calls for descriptions of the connection between teacher thinking and teacher action.

## Methodology

A quasi-experimental case study approach was used to gather data about the effects of cooperating teachers, university supervisors, and seminars on student teachers' thoughts and behaviors. Twelve student teachers were assigned to three student teaching sites on the basis of geographic preference. All three sites had ten weeks of full-time student teaching with weekly seminars.

In Treatment Group A student teachers were placed with cooperating teachers who had studied the research on effective instruction in an inservice course the previous year. During the time period of the study, the cooperating teachers were provided with literature updates on effective instruction and requested to review previously learned effectiveness concepts for use in their supervisory work. In addition, Treatment Group A student teachers attended a weekly seminar focused on the effective instruction research. The literature previously described in the perspectives section (p.3) was presented in sessions on Academic Learning Time, Active Teaching and/or Direct Instruction, classroom management, praise, and questionning strategies through lectures, videotapes, reading assignments, modeling and discussion. These student teachers also studied the history of educational research and the process/product paradigm. The university

supervisor who conducted the seminars also assessed lesson plans, recorded observations and conferenced with student teachers with an orientation toward the effectiveness concepts.

Treatment Group B student teachers were placed with cooperating teachers who had also studied the research on effective instruction during the previous year's inservice course. The seminar agenda for this group included the following topics, observation, bulletin boards, discipline, lesson planning, units, record keeping, learning centers, parent conferences, resource personnel, and curriculum content areas (reading, music, etc.). The university supervisor for Treatment Group B completed a survey of knowledge and use of effective instruction research and indicated minimal knowledge of the literature with no described integration in teaching or supervisory responsibilities.

Group C acted as a control with neither cooperating teachers or seminars influenced by the effective instruction research. The cooperating teachers did not participate in the previous year's inservice course. In addition, no concerted efforts were made to encourage cooperating teachers to integrate effectiveness concepts into their supervision. The seminar agenda contained themes identical to those studied by Treatment Group B with the addition of the topics of standardized testing and room arrangement. The university supervisor for this group responded to the survey of knowledge and use of effective instruction research similarly to Treatment Group B's university supervisor.

## Data Sources and Analysis

Data for the study were collected from a number of sources with variance in method and analysis. Three categories of data collection were implemented: information to verify treatment differences; student teacher instructional behavior data; and interviews of student teacher instructional thinking. Each are described in terms of collection and analysis procedures.

Treatment Verification

Collection procedures. A questionnaire was administered to each cooperating teacher to measure teachers' knowledge of the effective instruction literature and the extent to which effectiveness concepts were integrated into their classrooms. A questionnaire was also administered to each student teacher to determine her/his knowledge of the effectiveness literature at the end of student teaching. Both student teachers and cooperating teachers were asked to define several effectiveness concepts, to name researchers associated with the concepts, to describe instruction or inservice on the concepts in terms of length of time, value and use, and for professional demographics. As previously described, the university supervisors who worked with the student teachers who were responsible for the seminars were also surveyed for knowledge and use of effective instruction research.

Analysis procedures. An average number of years of teaching experience was computed for each cooperating teacher group. Additionally the following were computed for both cooperating and student teachers: an average of length of inservice; a mean of value and use ratings; and an average of numbers of correct definitions of and appropriate researchers associated with effectiveness concepts.

Student Teacher Instructional Behavior Data

Collection procedures. Each student teacher was videotaped conducting math instruction during the last two weeks of the clinical experience. The tapes were coded using a modified form of the Teacher Instructional Behavior Record (Gee, 1984). The TIBR was originially developed by researchers with the Far West Laboratory for Educational Research and Development for study of the influence of effective instruction research findings on preservice teacher education. The TIBR records the frequency of twenty teaching behaviors every 30 seconds. The behaviors were categorized into five instructional parts: Introduction;

Instruction; Closure; Instructional Maintenance; and Management Maintenance (see Appendix A). After training in the use of the TIBR, coders used tapes of student teachers not included in the study to achieve 85% intercoder agreement. Twelve student teacher tapes were then coded for frequency of occurrence of the 20 teaching behaviors individually and within categories. Raw data for each student teacher group's demonstration of the teaching behaviors are reported in Table 1 and for instructional categories in Table 2.

Coders also recorded the amount of time spent in the instructional categories of Introduction, Instruction and Closure. The numbers of minutes for each student teacher group are reported in Table 3.

Analysis procedures. The frequency of occurrence of the 20 teacher behaviors on the TIBR was analyzed for differences between the student teacher groups. The quasi-experimental nature of this study, limited sample per group, and the questions posed by the researchers directed the analysis of this data. Major questions addressed the influence of the cooperating teacher versus the cooperating teacher and seminar combined, and the impact of cooperating teachers' study of specific research information versus the effect of cooperating teachers who did not engage in the specific study. Data were isolated in paired comparisons of the treatment groups, and of each treatment group with the control group, using t tests to determine significant differences.

The frequency of instructional behaviors and number of minutes spent in the categories of Introduction, Instruction and Closure were analyzed with t tests for signficant differences between the treatment groups, and between each treatment group and the control group.

Interviews of Student Teachers' Instructional Thoughts.

Collection procedures. Each student teacher's video tape was also used in a stimulated recall interview in which the student teacher's thinking during the interactive phase of teaching was investigated. Structured probes focusing on

the introductory, instructional and closing parts of the lesson and classroom management asked teachers to: 1) describe what they were doing; 2) evaluate their effectiveness; and 3) suggest alternatives to the course of action taken. In addition, student teachers were asked to describe ideal teacher behaviors at each of the lesson junctures. Finally students were asked to describe the sources of ideas or information which influenced the decisions made in their instruction and the strategies described in their interviews.

Analysis procedures. The simulated recall data were analyzed through both qualitative and quantitative procedures. Following transcription the interview data were content analyzed for trends and patterns. Interviews were coded so that the analysis was conducted without knowledge of group membership.

In the quantitative analysis of the data, rating scales were constructed which reflected the following characteristics of student teacher response:

1. Self- critical of teaching performance with a range from a) satisfied without question, to b) ambivalent, to c) critical;
2. Resourceful in terms of concrete alternatives provided;
3. Source of ideas described;
4. Evidence of success with sources used to judge teaching effectiveness.

Intercoder agreement of 83% was obtained prior to coding the interview data.

## Results

The results of this study are presented in four sections of findings: treatment verification information; student teacher instructional behavior differences; student teacher instructional thinking differences; and relationships between the behavior and thinking data. Data sources, collection procedures and analyses have been described for the first three findings categories. The final result focus is an exploration of the presence or absence of patterns in what student teachers said about their teaching and how they

actually taught.

Treatment Verification Information

The mean number of years of teaching experience of the cooperating teachers in each group follows: Treatment Group A, 11; Treatment Group B, 6; Group C, 6. When asked about knowledge and use of effective instruction research, six of the eight cooperating teachers in Treatment Groups A and B described extensive inservice instruction (12-20 hrs.), ascribed a very valuable rating to the information, ranked their use of it from "sometimes" to "very often," and could accurately define 90% of the concepts and list researchers. The remaining two cooperating teachers in these groups did not respond to the survey. Of the four cooperating teachers in Group C, two responded that they had studied effective instruction research in the area of classroom management but not with respect to other aspects of the research. They were able to define half of the management concepts but could not define any other effectiveness concepts or name any researchers.

When student teachers were surveyed regarding their knowledge and use of effective instruction research findings, only Treatment Group A described instruction in all of the concepts, could define the concepts and name specific researchers. Student teachers in Treatment Group B and Group C responded that they had studied concepts in management, but could not define more than 20% of the concepts and could not list researchers.

Student Teacher Instructional Behavior Differences

Comparisons were made between the three student teacher groups on the 20 individual instructional behaviors. Data on the differences are displayed in Table 1. Use of t tests on paired comparisons between the two treatment groups and between each treatment group and the control group found no significant differences. The demonstrated frequency differences between Treatment Group A and Treatment Group B and between Treatment Group A and Group C for the following

behaviors should be noted:

Behavior 1 - introduced objectives, goals of lesson;

Behavior 5 - gave instructions;

Behavior 8 - asked open questions;

Behavior 11- answered procedural questions;

Behavior 13- corrected seatwork;

Behavior 15- roamed the room.

Treatment Group A demonstrated more of these six behaviors.

It is also important that both Treatment Groups A and B demonstrated significantly more of the following teacher behavior than Group C:

Behavior 4 - corrected homework.

The researchers also direct attention to Group C's demonstration of the following behaviors in contrast to the data for Treatment Groups A and B:

Behavior 12- provided feedback;

Behavior 14- scanned the room.

Table 1

Frequencies of Demonstrated Behaviors per Math Instruction

| Behavior | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| 1. introduced objectives, goals | 4 | 0 | 1 |
| 2. outlined lesson | 3 | 0 | 3 |
| 3. reviewed goals, prev. instr. | 1 | 3 | 3 |
| 4. corrected homework | 29 | 23 | 0 |
| 5. instructed | 77 | 47 | 52 |
| 6. explained | 4 | 7 | 5 |
| 7. illustrated/modeled/demo | 48 | 39 | 46 |
| 8. asked open questions | 9 | 5 | 4 |
| 9. asked closed questions | 23 | 35 | 17 |
| 10.answered content questions | 0 | 5 | 2 |
| 11.answered procedural questions | 9 | 2 | 3 |
| 12.gave feedback | 58 | 48 | 146 |
| 13.corrected seatwork | 4 | 0 | 0 |
| 14.scanned the room | 6 | 9 | 11 |
| 15.roamed the room | 24 | 15 | 17 |
| 16.summarized lesson | 0 | 0 | 0 |
| 17.collected work | 0 | 11 | 2 |
| 18.restated rules | 1 | 1 | 0 |
| 19.told to attend | 5 | 7 | 4 |
| 20.disciplined | 5 | 1 | 2 |

Table 2

Frequencies of Behaviors Demonstrated in Instructional Categories

| Categories | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| Introduction | 37 | 26 | 7 |
| Instruction | 232 | 188 | 275 |
| Closure | 0 | 11 | 2 |

Table 3

Time Spent in Instructional Categories

| Categories | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| Introduction | 23 min. | 24 min. | 7 min. |
| Instruction | 138 min. | 112 min. | 180 min. |
| Closure | 0 | 7 min. | 7 min. |

When the instructional categories of Introduction, Instruction and Closure were examined for differences of demonstrated behavior frequency between student teacher groups, no significant differences were found. Again the differences warrant attention. Treatment Group A demonstrated more Introductory behaviors than Treatment Group B and Group C. Group C demonstrated more Closure behaviors than the two treatment groups, with the difference due however to one behavior difference (Behavior 17 - collected work).

Differences between the student teacher groups in the number of minutes spent in the three instructional categories were also analyzed with t tests. No significant differences between groups were found but differences in time spent were parallel to differences in frequency of demonstrated behaviors. Treatment Groups A and B spent more time in the category of Introduction than Group C. Within the category of Instruction, the differences between the groups in behaviors demonstrated are similar to the differences in time spent. The pattern in the category of Closure is unusual. Group C demonstrated more behaviors than Treatment Group B but spent the same amount of time.

In the process of reviewing videotapes to examine how each student teacher group used instructional time, an interesting pattern was observed in Treatment Group A's instruction. Each student teacher in the group used approximately 40% of the time spent in the Instruction category in a "guided practice" activity. This activity was not recorded on the TIBR and is in contrast to the amount of Instructional category time spent in "guided practice" by Treatment Group B and Group C, less than 6%.

Student Teacher Instructional Thinking Differences

Qualitative analysis of the interview data revealed similarities and differences between groups. There was evidence in all three groups of the inclusion of effectiveness concepts into their vocabulary. This was most evident in Treatment Groups A and B, but was also evident in Group C, expecially at the

beginning and end of the lesson.

When asked, "What is the number one most important thing a teacher should do at the beginning of a lesson?", three students in Treatment Groups A and B and two in Group C indicated that providing a focus was most important. Typical statements here included the following:

"State what we are going to do - state the objectives."

"This is what we are going to do. This is how we are going to do it."

"State why this is important, the objective or what we are going to cover and how we are going to do it."

In Treatment Group A the other student suggested "getting kids interested right off the bat." In Treatment Group B the fourth student suggested reviewing what was covered yesterday, while the other two student teachers in Group C suggested "getting everyone's attention." There were no clear differences between groups in their response to the question of important teaching behaviors at the beginning of a lesson.

The question about the most important thing to do during the main part of the lesson revealed clear differences between groups. All four of the student teachers in Treatment Group A recommended practice and assessing for student understanding. Only one of Treatment Group B student teachers suggested this, with the other three recommending maintaining student involvement (2) and interest (1). In Group C only one student teacher recommended assessing student understanding, while the others suggested being clear (1) and maintaining student interest (1) and involvement (1).

On the question asking for ideal behavior at the end of a lesson, ten of the twelve student teachers mentioned summary/closure (3 in Treatment groups A and B, 4 in Group C ). The only other response given to this question was to assess for understanding which was suggested by one student in both Treatment Groups A and B.

The management question elicited much greater response variety. two student teachers in Treatment group A suggested planning well and two suggested being task oriented. Two student teachers in Treatment Group B suggested "being consistent," one suggested communicating expectations and one suggested anticipating problems. In Group C there were four different suggestions ranging from scanning the room to being consistent, to being positive and "tailoring a system to fit each child."

Quantitative analysis of the interviews revealed the following patterns. Treatment Group A student teachers were less self critical of their performances on the tape, were more resourceful in suggesting alternatives to what they did on the tape, and mentioned their student teaching seminar as a primary source of ideas. Both Treatment Groups A and B student teachers used inferred management (i.e., on-task student behaviors) as evidence of success during the lesson, while Group C relied more heavily on content acquisition and student answers. These patterns are described below.

In the interview the student teachers were shown excerpts from their taped teaching segment and were asked if they were successful at the beginning, middle, and end of the lesson and with respect to classroom management. These responses were then blind coded into one of these categories: 1= satisfied without question; 2= ambivalent; and 3= critical. The mean codings for each group are presented in Table 4.

Table 4

Student Teacher Self-evaluations

| | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| Beginning | 1.00 | 1.25 | 2.25 |
| Middle | 1.25 | 1.75 | 2.00 |
| End | 1.00 | 1.00 | 1.00 |
| Management | 1.00 | 1.00 | 1.25 |
| Mean | 1.06 | 1.25 | 1.62 |

Scale: 1= satisfied without question; 2= ambivalent; 3= critical.

While the mean rating of all student teachers was in the positive direction, Treatment Group A was the most positive about their performance during the lesson with Group C being the least.

The student teachers, when asked if they were successful at the various junctures in the lesson were also asked the follow-up question, "How can you tell?" These responses were coded into the following three categories: 1) inferred management from on task behavior; 2) content acquisition and student answers; and 3) student interest. There were no differences between responses across different categories of the lesson, so the frequencies were summed for the lesson. The total numbers for these categories for these groups are shown in Table 5.

Table 5

Sources Used To Infer Success Within A Lesson

| | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| Inferred Mgmt. (on task behavior) | 6 | 6 | 3 |
| Content Acquisition (student Answers) | 3 | 4 | 7 |
| Student Interest | 2 | 2 | 3 |

The major finding from these data are that the treatment groups both relied most heavily on inferred management through on-task student behaviors, while the control group mentioned content acquisition as evidenced by student answers.

Student teachers were also asked if they should have done anything differently at each of the junctures on the tape. The mean number of specific alternatives was tabulated for each group and are shown in Table 6.

Table 6

Number of Specific Alternatives Suggested

| | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| Beginning | 3 | 2 | 2 |
| Middle | 4 | 1 | 1 |
| End | 2 | 2 | 2 |
| Management | 2 | 0 | 2 |
| Mean | 2.75 | 1.25 | 1.75 |

Student teachers in Treatment Group A were able to suggest the most alternative strategies, with this figure (2.75) being over twice the mean number suggested by Treatment Group B and almost twice that of Group C.

Finally the three groups were compared in terms of their responses to two questions about sources of ideas during their student teaching. These responses are displayed in Table 7.

Table 7

Sources of Ideas

| | Treatment Group A | Treatment Group B | Group C |
|---|---|---|---|
| Student Teaching Seminar | 5 | 0 | 0 |
| Cooperating Teacher | 1 | 3 | 1 |
| Coursework | 1 | 1 | 2 |
| None | 0 | 3 | 3 |
| Previous Experience | 1 | 1 | 0 |
| Other | 0 | 0 | 1 |

The clearest difference between the groups was in terms of the response, "student teaching seminar." Five of Treatment Group A's responses contained this source, while none of the responses of student teachers in the other groups referred to seminars. Three responses of student teachers in Treatment Group B identified their cooperating teacher as a major source of ideas while only one from each of the other groups did. Also three responses of student teachers from Treament Group B and Group C indicated an inability to identify a concrete source of ideas.

Relationship between Student Teacher Thinking and Behavior

The patterns found within the categories of demonstrated teaching behaviors were examined with respect to patterns in the way student teachers talked about their teaching in each of the categories. In the category of Introduction, Treatment Groups A and B demonstrated significantly more behaviors (37, 26) than Group C (7). In interviews Treatment Groups A and B referred to concepts underlying the effectiveness related behaviors three times each while Group C responses contained only two descriptions.

As previously described, a review of the videotapes and data on time spent in different categories of instruction indicated that Treatment Group A student teachers spent a large portion of their instructional time in "guided practice"

or seatwork activities accompanied by monitoring. This pattern was also reflected in the frequency of Behavior 15 - roamed the room. Their interview responses about the main part of the lesson all reflect this priority; all four said that practice and assessing for student understanding were the important teacher behaviors for the main part of the lesson. The responses of Treatment Group B and Group C regarding important instructional behaviors during the same part of the lesson reflect concern for both management and instruction. The demonstrated behaviors of these groups in this category however don't match their interview responses.

The responses of all student teachers reflect the importance of "summary/closure" behaviors at the end of the lesson however not one of the 12 student teachers demonstrated this behavior.

The specific responses of Treatment Groups A and B about management behaviors have little relation to the actual behaviors demonstrated, however Treatment Group A described and demonstrated the greatest number of management strategies. Group C students used the fewest management behaviors and described the least specific suggestions in their interviews.

There may be a relation between the difference in student teachers' satisfaction with the beginning or introduction of the lesson and the difference in demonstrated behaviors, but no potential of such is evident in the closure of the lesson.

When student teachers' responses were reviewed for specific alternatives suggested for each part of a lesson, Treatment Group A suggested more strategies in all categories except the end or closure of a lesson. In the middle or instruction part of the lesson, the greater number of strategies are not matched by the behaviors demonstrated. It is important to note again that the TIBR did not capture the "guided practice" activities conducted in this group's teaching during this part of the lesson.

Although these suggested relationships were not analyzed statistically, they are noteworthy for examining teaching thoughts and behaviors at the preservice level and for future study.

## Discussion

At this time, it is important to note this study's limitations: small sample size; single instructional episode; and a quasi-experimental design. In addition, the teacher behavior frequency data should be viewed with a caution that certain behaviors are not appropriate more than once or twice in a lesson, i.e., more is not necessarily better.

Those behaviors exhibited in greater frequency by Treatment Group A and sometimes B can be traced to the research on effective instruction, specifically, Good and Grouws' Missouri Mathematics Effectiveness Project (1979). The researchers taught fourth grade classroom practitioners to present clear goals and objectives, correct homework at the beginning of each lesson, provide guided practice with teacher monitoring. Monitoring student seatwork requires teachers to roam the room checking student work and progress. The differences in the frequency of student teacher questioning behavior may be attributed to familarity with research literature on teacher questioning (Gall, 1984).

The differences in student teachers' demonstration of Behavior 13 - provided feedback are similar to those observed after a similar intervention in the Far West study previously described (Driscoll, 1985). In both cases, student teachers studied Brophy's (1980, 1981) work on praise and the Beginning Teacher Evaluation Study (Fisher et al, 1980) for implications regarding academic feedback. Treatment Groups A and B's fewer feedback behaviors may be interpreted as a more cautious and selective use of praise and feedback. The lower requency of Behavior 14 - scanned the room, is consonant with the frequency of Behavior 15 - roamed the room. Group C student teachers appeared to remain at the front or in one area of the classroom scanning frequently. The treatment student teachers

roamed the room frequently to monitor instead of scanning from one location.

While it is not possible to attribute directly to the research on effective instruction, the differences in self-criticism, numbers of alternative strategies and descriptions of ideal behaviors are noteworthy in student teachers' descriptions of their teaching. The research literature may have influenced Treatment Group A's thinking in these aspects by providing a model for comparison and extending the range of teacher behaviors available. These student teachers did refer to the content of their seminars, in contrast to sources found in other student teachers' descriptions.

Several explanations are possible for the presence and absence of relationships between specific behaviors and underlying concepts. When student teachers talked about behaviors such as Behavior 1 - stated goals, objectives, and also demonstrated such behaviors, it may be that they have not only heard descriptions of such behaviors, they have seen examples on videotape, through observation, and been reminded to plan for such in their lesson plans. It is also possible that such behaviors are relatively easy to implement and/or are an accepted way of teaching from the student teacher's own educational experience. Level of difficulty may explain the presence of summary/closure behaviors in student teacher descriptions and the absence of demonstrations of same. A previous study of student teachers' application of effectiveness concepts revealed difficulty with the implementation of closure behaviors due to "timing, the end of the lesson, getting ready for the next subject, the transition" (Driscoll, 1985). Again the lack of clear relationships between talk about and exhibition of management behaviors may be the result of the ambiguous nature of much instruction and advice on classroom management and the difficulty level of implementation. When student teachers' descriptions of management were vague or general with terms such as "be consistent," there were few specific behaviors exhibited.

Future research in this area might focus on these difficult to implement behaviors and investigate the variables that hamper successful implementation. A methodological alternative to this study's quasi-experimental approach would be to conduct a more intensive case study with fewer subjects. An indepth examination of the behavior data from this study revealed important differences between individual student teachers within each group in terms of frequency of behaviors. The lack of statistical significance between groups is partially attributable to this factor and further directs future investigations to case study design. Zeichner's (1980) analysis of the "myths and realities" of field-based experiences in preservice teacher education concluded that in numerous studies of field experiences, incongruent influences and occurrences operate to reduce the statistical relationships of dominant trends. The researchers of this study concur and suggest that the profession must begin to undertake a closer study of teacher education experiences for more accurate information on program impact. Alternate approaches would allow researchers to identify factors within the student teaching milieu that influence individual acceptance, retention and rejection of ideas and concepts encountered in the teacher education program.

An interesting finding of this study was the presence of certain effectiveness concepts and behaviors in Group C. When university supervisors, cooperating teachers and student teachers in this group were queried about effectiveness-related concepts they expressed little contact or knowledge in this area. However student teachers in this group made comments such as: "state why this is important, the objective or what we are going to cover, how we are going to do it" in describing introductory behaviors; "assess that students are learning it" as important instructional behavior for the main part of the lesson; "summarize so that they know what you have been trying to do" for the end of the lesson; and "as long as they are on task, I try to challenge them and work with

them, looking at all corners and knowing what is going on everywhere in the room" in describing management. Each of these statements suggests some type of exposure to the effectiveness literature. The researchers questioned the source.

Three possibilities exist. The first is through formal coursework, but student teacher reports as well as previous research in the teacher education department in which they studied (Driscoll et al, 1984) indicated that the effectiveness research had not influenced the teacher education curriculum. The results of this ~~same~~ study as well as self reports by the university supervisor also suggest that seminars were not the source either. A possible explanation is that effectiveness concepts are being disseminated into schools through in-service workshops, word of mouth, becoming a part of teacher folk language. Another reason may be that some of the effectiveness concepts are not unique or especially innovative. Effective teachers have been demonstrating the related behaviors without ever hearing about the research. Thus cooperating teacher modeling may also have influenced student teacher responses in Group C.

This study has implications for researchers interested in the effectiveness literature as well as those interested in the effect of student teaching variables on student teacher thoughts and behaviors. As in previous research (Driscoll 1985), student teachers exhibited differential understandings and utilization of effectiveness concepts. In addition, this study found student teachers to be susceptible to a number of influences, foremost of which were university supervisor and seminar. While acknowledging the confines of a small sample size and other methodological limitations, the authors view this study as a beginning endeavor to bring the domains of teacher thought and teacher action together. It follows the recommendation of Clark and Peterson (1985) that understanding the reciprocal relationship between teacher thinking and behavior will promote a fuller understanding of the process of teaching. More

importantly, understanding the subtleties of the relationship in the context of preservice teacher education will have multiple extensions to policies and programs.

References

Borko, H., Cone, R., Russo, N. & Shavelson, R. (1979). Teachers' decision making. In P. Peterson & H. Walberg (Eds.), Research on teaching: Concepts, findings and implications. Berkeley: McCutchan.

Brophy, J. (1979). Teacher behavior and its effects. Journal of Educational Psychology, 71 (6), 733-750.

Brophy, J. (1981). On praising effectively. Elementary School Journal, 81 (2), 269-278.

Brophy, J. (1980). Teacher praise: A functional analysis. East Lansing, MI: Institute for Research on Teaching.

Brophy, J. & Evertson, C. (1976). Learning from teaching: A developmental perspective. Boston, MA: Allyn & Bacon.

Clark, C. & Yinger, R. (1979). Teachers' thinking. In P. Peterson & H. Walberg (Eds.), Research on teaching: Concepts, findings and implications. Berkeley: McCutchan.

Clark, C. & Peterson, P. (1985). Teachers' thought processes. In M. Wittrock (Ed.), Third handbook of research on teaching. New York, NY: Macmillan.

Driscoll, A. (1985). The response of student teachers to the research on effective instruction. Teacher Education Quarterly, 2 (3), 44-58.

Driscoll, A., Johns, K. & Ponzio, R. (1984). Applying research to teacher education. Paper presented at the annual conference of the American Association of Colleges of Teacher Education, San Antonio, Texas.

Driscoll, A. & Stevens, D. (1985). Classroom teachers' response to the research on effective instruction. Paper presented at the annual conference of the American Educational Research Association, Chicago.

Fisher, C., Berliner, D., Filby, N., Marliave, R., Cahen, L. & Dishaw, M. (1980). Teaching behaviors, academic learning time and student achievement: An overview. In C. Denham & A. Lieberman (Eds.), Time to learn. Washington, DC: National Institute of Education.

Gall, M. (1984, Nov.). Synthesis of research on teacher questioning. Educational Leadership, 40-47.

Gee, E. (1984). Teacher instructional behavior manual. San Francisco, CA: Far West Laboratory for Educational Research and Development.

Good, T. & Grouws, D. (1979). The Missouri Mathematics Effectiveness Project: An experimental study in fourth grade classrooms. Journal of Educational Psychology, 71 (3), 355-362.

Good, T., Grouws, D. & Ebmeier, H. (1983). Active mathematics teaching. New York, NY: Longman.

Goodman, J. (1983). The seminar's role in the education of student teachers: A case study. Journal of Teacher Education, 34 (3), 44-47.

Johnson, J. (1969). Changes in student teacher dogmaticism. Journal of Educational Research, 62, 224-226.

Koehler, V. (1985). Research on preservice teacher education. Journal of Teacher Education, 36 (1), 23-30.

Kounin, J. (1977). Discipline and group management in classrooms. New York, NY: Robert E. Kreiger Publishing Co.

Lanier, J. (1985). Research on teacher education. In M. Wittrock (Ed.), Third handbook of research on teaching. New York, NY: Macmillan.

McNair, K. (1979). Capturing inflight decisions: Thoughts while teaching. Education Research Quarterly, 3, 26-42.

Rosenshine, B. (1983). Teaching functions in instructional programs. Elementary school Journal, 83, 335-351.

Seperson, M. & Joyce, B. (1973). Teaching styles of student teachers as related to those of their cooperating teachers. Educational Leadership, 31, 146-151.

Shavelson, R. (1976). Teachers' decision making. In N. L. Gage (Ed.), The psychology of teaching methods, Seventy-fifth Yearbook of the National Society for the Study of Education, Part I. Chicago, IL: University of Chicago Press.

Stevens, D. & Driscoll, A. (1986). Applying effective instruction research to inservice in a rural setting. Journal of Classroom Interaction, in press.

Tabachnick, B. R., Popkewitz, T. & Zeichner, K. (1980). Teacher education and the professional perspectives of student teachers. Interchange, 10, 12-29.

Warren, D. (1985). Learning from experience: History and teacher education. Educational Researcher, 14 (10), 5-12.

Weil, M. (1985, Jan.). Research use in inservice and preservice education: A case study of California. Journal of Teacher Education, 36 (1), 65-69.

Yee, Z. (1969). Do cooperating teachers influence the attitudes of student teachers? Journal of Educational Psychology, 15 (4), 327-332.

Zeichner, K. (1980). Myths and realities: Field-based experiences in preservice teacher education. Journal of Teacher Education, 31 (6), 45-55.

Zimpher, N. L., de Voss, G. G., & Nott, D. L. (1980). A closer look at university student supervision. Journal of Teacher Education, 31 (4), 11-15.

Appendix A

Teacher Instructional Behavior Record